



[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2012-1006; Directorate Identifier 2012-NE-28-AD; Amendment 39-17392; AD 2013-05-20]

RIN 2120-AA64

Airworthiness Directives; Rolls-Royce Deutschland Ltd & Co KG Turbojet Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: We are adopting a new airworthiness directive (AD) for certain Rolls-Royce Deutschland Ltd & Co KG (RRD) Spey 511-8 turbojet engines. This AD requires inspection and, if necessary, replacement of affected bolts and, if any bolt is found broken, inspection of the adjacent disc(s) for damage. This AD was prompted by a recent quality review determination that bolts with reduced material properties may have been installed in some engines. We are issuing this AD to prevent uncontained turbine disc fracture and damage to the airplane.

DATES: This AD becomes effective [Insert date 35 days after date of publication in the FEDERAL REGISTER].

ADDRESSES: The Docket Operations office is located at Docket Management Facility, U.S. Department of Transportation, 1200 New Jersey Avenue SE., West Building Ground Floor, Room W12-140, Washington, DC 20590-0001.

FOR FURTHER INFORMATION CONTACT: Frederick Zink, Aerospace Engineer,
Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England
Executive Park, Burlington, MA 01803; phone: 781-238-7779; fax: 781-238-7199; email:
frederick.zink@faa.gov.

SUPPLEMENTARY INFORMATION:

Discussion

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to include an AD that would apply to the specified products. That NPRM was published in the *Federal Register* on November 7, 2012 (77 FR 66769). That NPRM proposed to correct an unsafe condition for the specified products. The Mandatory Continuing Airworthiness Information states:

The results of a recent quality review of low pressure turbine (LPT) support assembly, high pressure turbine (HPT) bearing support assembly and HPT air seal sleeve bolts identified that, before installation, those bolts are not subjected to a complete quality inspection. As a consequence, bolts with reduced material properties may have been installed in some engines.

This condition, if not detected and corrected, could lead to failure of a bolt, potentially causing turbine disc fracture and release of high-energy debris, possibly resulting in damage to the aeroplane and/or injury to the occupants.

Comments

We gave the public the opportunity to participate in developing this AD. We received no comments on the NPRM (77 FR 66769, November 7, 2012).

However, we made editorial changes to paragraph (e) of this AD for clarification purposes. Paragraphs (e)(1) and (e)(2) were re-written to clearly define the drawdown for engines that have accumulated more than 4,500 engine cycles since the last engine shop

visit on the effective date of the AD. If an engine had greater than 4,500 cycles since the last engine shop visit, paragraph (e)(1) of the NPRM (77 FR 66769, November 7, 2012) could be interpreted to mean that the actions were required before further flight. This is not the intent of the proposed rule. Paragraph (e)(2) of the NPRM specified that an inspection within 100 engine cycles was required for engines with greater than 4,400 cycles since last shop visit, but we determined that this could be confusing. We therefore changed paragraphs (e)(1) and (e)(2) in the final rule to:

(1) If engine cycles accumulated since the last engine shop visit are 4,400 cycles or more on the effective date of this AD, visually inspect the bolts installed in the low-pressure turbine (LPT) support assembly, high-pressure turbine (HPT) bearing support assembly, and HPT air seal sleeve within 100 engine cycles-in-service.

(2) If engine cycles accumulated since the last engine shop visit are fewer than 4,400 cycles on the effective date of this AD, visually inspect the bolts installed in the LPT support assembly, HPT bearing support assembly, and HPT air seal sleeve before accumulating 4,500 engine cycles since the last shop visit.

Paragraph (e) was also modified to clarify that the type of inspection required is a visual inspection. The NPRM only stated to “inspect.”

Paragraph (e) was also modified by removing the reporting requirement, because that requirement is not necessary to correct the unsafe condition.

Conclusion

We reviewed the available data and determined that air safety and the public interest require adopting the AD with the changes described previously. We determined

that these changes will not increase the economic burden on any operator or increase the scope of the AD.

Costs of Compliance

We estimate that this AD affects about six engines installed on airplanes of U.S. registry. We also estimate that it will take about 2 hours per engine to comply with this AD. The average labor rate is \$85 per hour. Required parts will cost about \$860 per engine. Based on these figures, we estimate the cost of the AD on U.S. operators to be \$6,180.

Authority for This Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. "Subtitle VII: Aviation Programs," describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in "Subtitle VII, Part A, Subpart III, Section 44701: General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

We determined that this AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on

the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this AD:

1. Is not a “significant regulatory action” under Executive Order 12866;
2. Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and
3. Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

We prepared a regulatory evaluation of the estimated costs to comply with this AD and placed it in the AD docket.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Operations office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Operations office (phone: (800) 647-5527) is provided in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

Adoption of the Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by adding the following new AD:

2013-05-20 **Rolls-Royce Deutschland Ltd & Co KG (formerly Rolls-Royce Deutschland GmbH, formerly Rolls-Royce plc):** Amendment 39-17392; Docket No. FAA-2012-1006; Directorate Identifier 2012-NE-28-AD.

(a) Effective Date

This airworthiness directive (AD) becomes effective [Insert date 35 days after date of publication in the FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to Rolls-Royce Deutschland Ltd & Co KG (RRD) Spey 511-8 turbojet engines, serial numbers 8847, 8853, 8879, 8989, 8994, and 9817, with a date of the last shop visit before November 15, 2007.

(d) Reason

This AD was prompted by a recent quality review determination that bolts with reduced material properties may have been installed in some engines. We are issuing this AD to prevent uncontained turbine disc fracture and damage to the airplane.

(e) Actions and Compliance

Unless already done, do the following actions for engines with a date of the last shop visit before November 15, 2007:

(1) If engine cycles accumulated since the last engine shop visit are 4,400 cycles or more on the effective date of this AD, visually inspect the bolts installed in the low-pressure turbine (LPT) support assembly, high-pressure turbine (HPT) bearing support assembly, and HPT air seal sleeve within 100 engine cycles-in-service.

(2) If engine cycles accumulated since the last engine shop visit are fewer than 4,400 cycles on the effective date of this AD, visually inspect the bolts installed in the LPT support assembly, HPT bearing support assembly, and HPT air seal sleeve before accumulating 4,500 engine cycles since the last shop visit.

(3) If you identify any broken bolt, brown bolt, or bolt with a rough oxidized surface, replace all bolts of the inspected engine flange with new bolts before further flight.

(4) If you find any broken bolt in the LPT support assembly, visually inspect the LPT stage 2 disc for damage before further flight.

(5) If you find any broken bolt in the HPT shaft air seal sleeve, visually inspect the HPT stage 1 disc for damage before further flight.

(f) Installation Prohibition

After the effective date of this AD, do not install any LPT support assembly, HPT bearing support assembly, or HPT air seal sleeve into any engine, or any engine onto an airplane, unless the affected bolts have been inspected and replaced if necessary, and the

LPT stage 2 disc and HPT stage 1 disc have been inspected if necessary, as specified in paragraph (e) of this AD.

(g) Definition

For the purpose of this AD, a shop visit is when the engine is inducted into the shop for any maintenance involving the separation of pairs of major mating engine flanges (lettered flanges). However, the separation of engine flanges solely for the purposes of transporting the engine without subsequent engine maintenance is not an engine shop visit.

(h) Alternative Methods of Compliance (AMOCs)

The Manager, Engine Certification Office, FAA, may approve AMOCs to this AD. Use the procedures found in 14 CFR 39.19 to make your request.

(i) Related Information

(1) For more information about this AD, contact Frederick Zink, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; phone: 781-238-7779; fax: 781-238-7199; email: frederick.zink@faa.gov.

(2) Refer to European Aviation Safety Agency AD 2012-0158, dated August 22, 2012, and RRD Alert Service Bulletin Sp72-A1068, for related information.

(3) For service information identified in this AD, contact Rolls-Royce Deutschland Ltd & Co KG, Eschenweg 11, Dahlewitz, 15827 Blankenfelde-Mahlow, Germany; phone: 49 0 33-7086-1200 (direct 1016); fax: 49 0 33-7086-1212. You may view this service information at the FAA, Engine & Propeller Directorate, 12 New

England Executive Park, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

(j) Material Incorporated by Reference

None.

Issued in Burlington, Massachusetts, on March 7, 2013.

Colleen M. D'Alessandro,
Assistant Manager, Engine & Propeller Directorate,
Aircraft Certification Service.

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